

Case 3163

Holacanthus ciliaris bermudensis Goode, 1876 (currently *Holacanthus bermudensis*; Osteichthyes, Perciformes): proposed conservation of usage of the subspecific name by the designation of a neotype

Carter R. Gilbert

Department of Natural Sciences, Florida Museum of Natural History,
University of Florida, P.O. Box 117800, Gainesville, Florida 32611-7800,
U.S.A. (e-mail: carter@flmnh.ufl.edu)

and the other members of the joint Common and Scientific Names Committee of the American Fisheries Society and the American Society of Ichthyologists and Herpetologists: Joseph S. Nelson (Chairman) (*University of Alberta, Alberta, Canada*), Edwin J. Crossman (*Royal Ontario Museum, Toronto, Ontario, Canada*), Hector Espinosa-Perez (*Universidad Nacional Autonoma de México, Mexico City, D.F., Mexico*), Lloyd T. Findley (*CIAD-Unidad Guaymas, Guaymas, Sonora, Mexico*), Robert N. Lea (*California Fish and Game, Monterey, California, U.S.A.*) and James D. Williams (*United States Geological Survey, Gainesville, Florida, U.S.A.*).

Abstract. The purpose of this application is to conserve the subspecific name of *Holacanthus ciliaris bermudensis* Goode, 1876 (currently cited as *Holacanthus bermudensis*) for the blue angelfish (family POMACANTHIDAE), a common, relatively widespread and visually prominent marine reef-dwelling species occurring in the tropical Western Atlantic. Goode's (1876) original description was based partly or entirely on hybrids (a total of 12 syntypes) between the blue angelfish and the closely related queen angelfish, *Holacanthus ciliaris* (Linnaeus, 1758) and, under Article 23.8 of the Code, *H. bermudensis* is not a valid name for the parent species. It is proposed that a neotype for *H. bermudensis* be designated in accord with the current usage of the name.

Keywords. Nomenclature; taxonomy; Osteichthyes; Perciformes; POMACANTHIDAE; *Holacanthus bermudensis*; blue angelfish; Western Atlantic.

1. Goode (1876, pp. 43–44) described *Holacanthus ciliaris* var. *bermudensis* based on 12 syntypes from Bermuda. The name *bermudensis* was conditionally proposed (on the provision that the differences from *H. ciliaris* 'should prove constant') but is available under Article 11.5.1 of the Code.

2. Jordan & Rutter (in Jordan & Evermann, 1898, p. 1684) proposed the name *Angelichthys isabelita*, based on the holotype (specimen no. CAS-SU 363 in the California Academy of Sciences, San Francisco) from Key West, Florida, for what is called in English the blue angelfish. Nichols & Mowbray (1914, p. 581) later described

Angelichthys townsendi, also based on a holotype from Key West (specimen no. AMNH 4751 in the American Museum of Natural History, New York).

3. Of the three names *bermudensis*, *isabelita* and *townsendi*, *isabelita* was the one most frequently used between 1898 and 1933 (see, for example, Evermann & Marsh, 1900, p. 252; Breder, 1929, p. 220; and Jordan, Evermann & Clark, 1930, p. 361).

4. Beebe & Tee-Van (1933a, p. 149; 1933b, p. 177) determined that the descriptions of both *bermudensis* and *isabelita* were based on the blue angelfish. Following priority, they adopted the name *bermudensis* for the taxon.

5. W.H. Longley had earlier concluded that the description of the third nominal species, *Angelichthys townsendi*, was based on a hybrid between the blue angelfish and the closely related queen angelfish, *Holacanthus ciliaris* (Linnaeus, 1758). His conclusions were summarized by Hildebrand (in Longley & Hildebrand, 1941, p. 154), who used the name *A. isabelita* for the blue angelfish and made no mention of *bermudensis*.

6. With the exception of Longley & Hildebrand (1941), subsequent authors followed Beebe & Tee-Van (1933a, 1933b) in using the name *bermudensis* for the blue angelfish during the period 1933–1968 (see, for example, Briggs, 1958, p. 283; Bardach, 1958, p. 143; Bardach, 1959, p. 80; Menzel, 1959; Springer & Woodburn, 1960, pp. 69, 94; Bailey et al., 1960, p. 32; Herald, 1960, p. 156; Collette, 1962, p. 442; Böhlke & Chaplin, 1968, p. 418).

7. Feddern (1968, p. 377) analyzed the hybridisation between the blue angelfish and its close congener the queen angelfish, and determined that all three extant syntypes of Goode's (1876) original material (specimens no. USNM 154852 in the National Museum of Natural History, Washington, D.C.), as well as the holotype of *Angelichthys townsendi*, are hybrids. Feddern (1968) also found that the holotype of *Angelichthys isabelita* is a purebred blue angelfish which shows no evidence of hybridisation.

8. Feddern (1968) reintroduced the younger name *isabelita* for the blue angelfish because of the 'probable hybrid nature' of *bermudensis*, and Randall (1968, pp. 187–188) and Starck (1968, p. 24) followed Feddern in using *isabelita*.

9. Bailey et al. (1970, pp. 44, 77–78) retained *bermudensis* for the blue angelfish, pointing out that Feddern's reintroduction of the name *isabelita* for this species was 'unnecessary'. They erroneously recorded that 'under Article 17(2) of the International Code of Zoological Nomenclature a species-group name that is composite or found to be based on a hybrid retains availability for either parental species until formally restricted to one or the other in a subsequent publication [present italics]. In the interest of stability of nomenclature we restrict the name *bermudensis* to the blue angelfish' (see para. 11 below). On this basis, Feddern (1972, p. 4) reversed his previous usage and again adopted *bermudensis* for the blue angelfish. However, the words in the present italics (above) did not occur in the Code.

10. Article 17(2) of both the 1961 and 1964 editions of the Code stated (as does Article 17.2 of the current edition) that a species-group name based on specimens later considered to be hybrids remains available, but no mention was made as to its validity for a taxon. The situation was clarified by an addition to the Code adopted at the Monaco International Congress of Zoology in 1972 (BZN 29: 81, December 1972; see also BZN 31: 79–81, August 1974). The new Article 24c stated that 'a species-group name which is found to have been based on a hybrid (Art 17(2)) must

not be applied to either of the parental species'. This addition was incorporated into the 1985 edition and the current (4th) edition of the Code (as Article 23h and 23.8 respectively).

11. Although its use for the purebred blue angelfish is invalid under Article 23.8 of the Code, since it was based (at least in part) on hybrid specimens, the name *bermudensis* has been adopted in all publications subsequent to Bailey et al. (1970); see, for example, Allen (1979, pp. 286–287), Robins et al. (1980, p. 47), Robins et al. (1991, p. 56), Robins & Ray (1986, p. 194, pl. 3), Boschung (1992, p. 149), Humann (1994, p. 27), Smith (1997, pp. 546–547), Deloach (1999, p. 359), Smith-Vaniz, Collette & Luckhurst (1999, p. 277).

12. The blue angelfish is a common and attractive reef fish in Florida, the Bahamas and Bermuda, is readily observed by recreational swimmers and divers, and is frequently displayed in public aquaria. The specific name *bermudensis* has been consistently used during the past 67 years (except briefly in 1968) in nearly every book on western Atlantic reef fishes, in recreational guides, in information panels associated with public displays, and in scientific publications covering applied fields (ecology, conservation, behavior and physiology) as well as taxonomy (paras. 6, 9 and 11 above).

13. Smith-Vaniz, Collette & Luckhurst (1999, p. 277), in their book on Bermudan fishes, reviewed the nomenclatural history of the blue angelfish and strongly recommended, in the interest of stability, that an application be submitted to the Commission seeking conservation of the usage of the specific name of *Holacanthus bermudensis*. To once again reverse the usage of its scientific name and adopt *isabelita* for this common, well known, visually prominent fish would be most unfortunate; it would serve no useful purpose and would be confusing to all those with an interest in the species.

14. Feddern's (1968) determination of the holotype of *Angelichthys isabelita* Jordan & Rutter, 1898 as a purebred blue angelfish, without evidence of hybridisation, and thus the synonymy between *Holacanthus bermudensis* auct. and *isabelita*, has been accepted by subsequent authors (paras. 8, 9 and 11 above). We therefore propose that the usage of *H. bermudensis* should be conserved for the blue angelfish by the designation of the holotype of *H. isabelita* (see para. 2 above) as the neotype of *H. bermudensis*. We have considered a neotype from Bermuda, but all the specimens from there which we have checked (in the collections of the University of Florida, the Academy of Natural Sciences of Philadelphia, and the National Museum of Natural History, Washington) show some evidence (however slight) of introgressive hybridisation. Adoption of the *isabelita* holotype as the neotype would render the name *isabelita* a junior objective synonym of *bermudensis* and as such *isabelita* would be placed on the Official Index, so removing the threat to the stable and exclusive use of *bermudensis* for the blue angelfish.

15. This application is supported by J. Albert, R.M. Bailey, H.L. Bart, S.A. Bortone, H.T. Boschung, B.W. Bowen, J.C. Briggs, N.M. Burkhead, R.C. Cashner, A.A. Echelle, D.A. Etnier, K.E. Hartel, R.E. Jenkins, R.L. Mayden, L.G. Nico, L.M. Page, J.E. Randall, H.W. Robison, M.J. Sabaj, W.F. Smith-Vaniz, W.C. Starnes, J.R. Stauffer, B.A. Thompson, J.C. Tyler, S.J. Walsh and J.T. Williams.

16. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Holacanthus ciliaris bermudensis* Goode, 1876, and to designate specimen no. CAS-SU 363 in the California Academy of Sciences, San Francisco, as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *bermudensis* Goode, 1876, as published in the trinomen *Holacanthus ciliaris bermudensis* and as defined by the neotype designated in (1) above;
- (3) to place on the Official Index of Invalid and Rejected Specific Names in Zoology the name *isabelita* Jordan & Rutter, 1898, as published in the binomen *Angelichthys isabelita* (a junior objective synonym of *Holacanthus ciliaris bermudensis* Goode, 1876).

References

- Allen, G.D.** 1979. *Butterflyfishes and angelfishes of the world*, vol. 2. Pp. 149–352. T.F.H. Publications, Neptune, New Jersey.
- Bailey, R.M., Fitch, J.E., Herald, E.S., Lachner, E.A., Lindsey, C.C., Robins, C.R. & Scott, W.B.** 1970. A list of common and scientific names of fishes from the United States and Canada, Ed. 3. *Special Publication of the American Fisheries Society*, 6: 1–150.
- Bailey, R.M., Lachner, E.A., Lindsey, C.C., Robins, C.R., Poedel, P.M., Scott, W.B. & Woods, L.P.** 1960. A list of common and scientific names of fishes from the United States and Canada. *Special Publication of the American Fisheries Society*, 2: 1–102.
- Bardach, J.E.** 1958. On the movements of certain Bermuda reef fishes. *Ecology*, 39(1): 139–146.
- Bardach, J.E.** 1959. The summer standing crop of fish on a shallow Bermuda reef. *Limnology and Oceanography*, 4(1): 77–85.
- Beebe, W. & Tee-Van, J.** 1933a. Nomenclatural notes on the shore fishes of Bermuda. *Zoologica*, 13(7): 133–158.
- Beebe, W. & Tee-Van, J.** 1933b. *Field book of the shore fishes of Bermuda*. 337 pp. Putnam's Sons, New York.
- Böhlke, J.E. & Chaplin, C.C.G.** 1968. *Fishes of the Bahamas and adjacent tropical waters*. 771 pp. Livingston Press, Wynnewood, Pennsylvania. (Revised 1993).
- Boschung, H.T.** 1992. Catalogue of freshwater and marine fishes of Alabama. *Bulletin of the Alabama Museum of Natural History*, 14: 1–266.
- Breder, Jr., C.M.** 1929. *Field book of marine fishes of the Atlantic coast*. 332 pp. Putnam's Sons, New York.
- Briggs, J.C.** 1958. A list of Florida fishes and their distribution. *Bulletin of the Florida State Museum, Biological Sciences*, 2(8): 223–318.
- Collette, B.B.** 1962. *Hemiramphus bermudensis*, a new halfbeak from Bermuda, with a survey of endemism in Bermudan shore fishes. *Bulletin of Marine Sciences of the Gulf and Caribbean*, 12(3): 432–449.
- Deloach, N.** 1999. *Reef fish behavior*. New World Publications, Jacksonville, Florida.
- Evermann, B.W. & Marsh, M.C.** 1900. The fishes of Porto Rico. *Bulletin of the United States Fish Commission*, 20(1): 49–350.
- Feddern, H.A.** 1968. Hybridization between the western Atlantic angelfishes, *Holacanthus isabelita* and *H. ciliaris*. *Bulletin of Marine Science*, 18(2): 351–382.
- Feddern, H.A.** 1972. Field guide to the angelfishes (Pomacanthidae) in the western Atlantic. *National Oceanographic and Atmospheric Administration Technical Report, National Marine Fisheries Service Circular*, 369: 1–10.
- Goode, G.B.** 1876. Catalogue of the fishes of the Bermudas. *Bulletin of the United States National Museum*, 5: 1–82.
- Herald, E.S.** 1960. *Living fishes of the world*. 304 pp. Doubleday, New York.
- Humann, P.** 1994. *Reef fish identification: Florida, Caribbean, Bahamas*. 267 pp. New World Publications, Jacksonville, Florida.
- Jordan, D.S. & Evermann, B.W.** 1898. The fishes of North and Middle America. *Bulletin of the United States National Museum*, 47(2): 1241–2183.

- Jordan, D.S., Evermann, B.W. & Clark, H.W. 1930. Check list of the fishes and fishlike vertebrates of North and Middle America, north of the northern boundary of Venezuela and Colombia. *Report of the United States Fish Commission* (1928) (Appendix X): 1–670.
- Longley, W.H. & S.F. Hildebrand. 1941. Systematic catalogue of the fishes of Tortugas, Florida. *Papers from Tortugas Laboratory*, 34 (Carnegie Institution of Washington, Publication 535): 1–331.
- Menzel, D.W. 1959. Utilization of algae for growth by the angelfish. *Journal of Conservation International Exploration Mer.*, 24: 308–313.
- Nichols, J.T. & Mowbray, L.L. 1914. A new angel-fish (*Angelichthys townsendi*) from Key West. *Bulletin of the American Museum of Natural History*, 33: 581–583.
- Randall, J.E. 1968. *Caribbean reef fishes*. 318 pp. T.F.H. Publications, Neptune, New Jersey.
- Robins, C.R., Bailey, R.M., Bond, C.E., Brooker, J.R., Lachner, E.A., Lea, R.N. & Scott, W.B. 1980. A list of common and scientific names of fishes from the United States and Canada (Fourth Edition). *Special Publication of the American Fisheries Society*, 12: 1–174.
- Robins, C.R., Bailey, R.M., Bond, C.E., Brooker, J.R., Lachner, E.A., Lea, R.N. & Scott, W.B. 1991. Common and scientific names of fishes from the United States and Canada (Fifth Edition). *Special Publication of the American Fisheries Society*, 20: 1–184.
- Robins, C.R. & Ray, G.C. 1986. *A field guide to Atlantic coast fishes of North America*. xi, 354 pp. Houghton Mifflin, Boston.
- Smith, C.L. 1997. *National Audubon Society field guide to tropical marine fishes*. 720 pp. Knopf, New York.
- Smith-Vaniz, W.F., Collette, B.B. & Luckhurst, B.E. 1999. Fishes of Bermuda: history, zoogeography, annotated checklist, and identification keys. *American Society of Ichthyologists and Herpetologists, Special Publication*, 4: 1–424.
- Springer, V.G. & Woodburn, K.D. 1960. An ecological study of the fishes of the Tampa Bay area. *Florida State Board of Conservation, Professional Papers Series*, 1: 1–104.
- Starck, III, W.A. 1968. A list of fishes of Alligator Reef, Florida with comments on the nature of the Florida reef fauna. *Undersea Biology*, 1(1): 1–40.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).